

Serial No: 10/064,427  
Filed: July 12, 2002  
Page 2 of 11

Examiner: Burton S. Mullins  
Group Art Unit: 2834

**Amendments to the Specification.**

Please substitute the following for the **Abstract**:

An electric motor comprises a stator fixedly mounted to a shaft and a rotor, surrounding the stator, rotatably mounted to the shaft. The shaft is stiffened by a plurality of plates mounted to the shaft and held thereon under significant compression by a lock nut. The compression is high enough to inhibit bending that would otherwise occur from external forces acting on the shaft. The plates also form the windings for the motor.

Please substitute the following paragraphs for paragraphs numbered [0010] – [0013] in the **Summary of the Invention**:

[0010] These and other problems are solved by the present invention of an electric motor of the type comprising an internal stator, including a shaft fixedly mounted to a structural support and having multiple windings capable of reversible current flow to alter the winding polarity, and an external rotor rotatably mounted to the shaft and having multiple magnets radially spaced about the periphery of the stator, with each of the magnets having at least one predetermined pole. The stator comprises a plurality of plates on the shaft under compression in a range of approximately  $6 \times 10^4$  and  $10 \times 10^4$  Newtons to sufficiently inhibit bending of the shaft due to external forces that would otherwise tend to cause the windings to contact the magnets. Ideally, the spacing between the magnets and periphery of the stator is approximately 1mm or less. The magnets are typically neodymium.

[0011] Preferably, the plurality of plates forms a winding core that carries the multiple windings. The plates form winding poles with caps on the end of each pole to retain the windings on the winding poles. The plurality of plates preferably comprises approximately 980 plates.

Serial No: 10/064,427  
Filed: July 12, 2002  
Page 3 of 11

Examiner: Burton S. Mullins  
Group Art Unit: 2834

[0012] In one aspect, the plates are held in the compression range by at least one lock nut.

The locknut is preferably threaded onto the shaft. The shaft can have an annular shoulder and the plurality of plates can be compressed between the locknut and the annular shoulder. The length of windings is preferably less than about 20 inches and the ratio of the length of the windings to the diameter of the external rotor is preferably approximately 5:1.

[0013] In another aspect, the plurality of plates form winding poles that define a winding axis, oriented such that the winding axis is not parallel to the shaft longitudinal axis. Preferably, the winding axis is at an angle of at least 10 degrees relative to the shaft longitudinal axis.